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A SURGICAL BOOK FROM THE FRONT.

Surgery in War. By Major A. J. Hull. Pp. xv+390. (London: J. and A. Churchill, 1916.) Price 10s. 6d. net.

THIS handbook is described in the introduction by Lieut.-Col. E. M. Pilcher, R.A.M.C., as a *résumé* of current practice and experience at the front; and the fact that Sir Alfred Keogh, the Director-General of the Army Medical Service, has written a preface to it stamps it as, at any rate, "semi-official." It has, therefore, an interest apart from its strictly surgical aspect, and although, as Sir Alfred Keogh remarks, "the views expressed therein may not command assent in every quarter," they demand careful and sympathetic consideration.

The author has enlisted the service of several of his colleagues who have had special experience in certain types of cases and have written the sections of the book corresponding to their own particular speciality: Lieut.-Col. Harrison discusses the bacteriology of wounds in war; Dr. Greenfield, the general condition of the wounded and wounds of the abdomen, and he is also responsible for the illustrations; Lieut. Tanner, the treatment of wounds by saline solution; Capt. Snowden, injuries to peripheral nerves; and Lieut. Edwards is responsible for the radiographic section of the book.

The treatment of a wounded man can be considered in three stages. The first is to combat shock and arrest hæmorrhage; the second is the great fight against infection; while the third is the effort to restore the damaged part to its normal function and the injured man to his normal health.

For the first of these stages the author strongly advocates the free use of morphia given in full doses—that is to say, until the patient is well under its influence and his pain has been materially subdued. This treatment will meet with fairly general approval. It is interesting to note that the Service affection for initial-letter abbreviations has reached even to the morphia bottle: the dose recommended is I.M.H. gr. $\frac{1}{4}$.

The author is not in favour of stimulants, and it is possible that in this he is regarding shock from an ultra-academic point of view. It is hard to define exactly what is meant by shock, and it is quite possible that a treatment which is not suitable for "shock" as defined, for example, by Crile may be quite a good one for a wounded man. It may be easy to draw laboratory distinctions between shock and collapse, but it is not easy to say where one begins and the other ends when confronted with what one of our statesmen so aptly calls a "heap of bloody rags."

Injection of saline solution is not recommended "unless there has been hæmorrhage," as its effects are transitory. This remedy is of course often disappointing in its results, but it would be a great pity if so simple a method of treatment were discredited. It is not easy to say how much blood

a man has lost, and unless the saline injection be excessive in amount, it is hard to see what harm is done, especially if the other methods of relieving shock be adopted as well.

The warning on p. 30 against keeping a patient too long on a restricted diet is very much to the point: this error is probably a survival of the ancient doctrine of "starving a fever." A patient, however, who, in addition to prolonged physical fatigue and mental strain, has to combat a severe suppuration lasting often for weeks or even months requires as generous a diet as he can digest and assimilate.

The second phase of the surgeon's work is the struggle against infection, and in this connection the author is a strong supporter of the "strong salt" or "salt-bag" treatment, and equally opposed to the use of chemical antiseptics. To quote from p. 66: "I have found the results of treatment by hypertonic solution superior to any antiseptic treatment. . . . The ordinary antiseptics, iodine, boric fomentations, peroxide of hydrogen, and alcohol dressing, have appeared to me decidedly inferior to the saline treatment. The strong antiseptics—for example, pure carbolic—have not been used in my wards."

This quotation is an ample explanation of the author's distaste for antiseptics. Iodine is so readily rendered inert by albuminous material as to be practically useless for a discharging wound; boric acid is a feeble germicide, and its main value is the prevention of secondary infection; while peroxide of hydrogen and alcohol must, from their physical properties, exert a very transient influence.

In an earlier section the author quotes the results of treating wounds with strong antiseptics early in their course, and sums up strongly against them. The evidence which he quotes of twenty-seven cases treated with pure carbolic acid—he does not say exactly how—is not very satisfying.

The whole subject of the disinfection of wounds by chemical antiseptics has been argued with an enthusiasm which has at times almost carried with it a sort of "odium theologicum." This is, however, merely an indication of the sincerity of the protagonists. There are undoubtedly many wounds which it is impossible to disinfect, if for no other reason than that the patient is unable to bear the severe operation which would be necessary, in order to open up the remote recesses of the wound and apply the antiseptic, until the infective process has gained too firm a hold for it to be stamped out. There are times, too, when the necessary *personnel* and equipment for such treatment are not available, and this must be so; but there are wounds which can be cleaned surgically, and there are occasions when opportunities for carrying this out are present, even if on rare occasions.

There is a solution commonly called "Lister's strong lotion," which consists of 5 per cent. carbolic acid containing 1/500th part of perchloride of mercury. This can be applied freely and thoroughly to wounds, and in some cases is successful in disinfecting them, even when bone has been

involved. But it must be allowed some time to act, and must be applied thoroughly to every part of the wound, not neglecting to remove foreign bodies and provide for the due drainage of the wounds. Further, it and all other antiseptics must be applied early, since when the wound is actually suppurating they are of little value, and in such cases the patient's own resisting power, aided by drainage, irrigation, artificially induced lymph discharge, or other methods of removing the bacterial toxins, is the main factor ensuring his recovery.

The author is almost as much opposed to the use of hypochlorous acid and its salts. He only makes mention of "Eusol," which has not the valuable property of hypochlorite of soda—namely, of dissolving sloughs, which of itself aids materially in facilitating drainage. Those who have seen stinking wounds become sweet very rapidly under the application of this group of disinfectants, or have seen wounds of the mouth treated with Chloramine T, will feel that these substances deserve stronger commendation.

In the sections of this book devoted to the third phase of the surgeon's work there is less disputable matter. In operations the use of local anæsthesia, supplemented if necessary by a general anæsthetic, is advocated, and for the treatment of the various groups of injuries excellent and definite rules are laid down, one of the best sections being that on injuries of the peripheral nerves.

The book is illustrated with a number of simple drawings of splints and apparatus, which might perhaps be amplified in a succeeding edition, showing more exactly the details of their use. The mass of compound fractures which has come for treatment has resulted in the invention of numerous, ingenious, practical devices for their fixation, and for a surgeon to avail himself of these, it is necessary that he should have exact working details—for example, how to take the appropriate measurements, and also, in the case of more elaborate apparatus, where to procure the same. There is also an interesting series of skiagrams taken by Lieut. Edwards, the majority of which show bullets in various situations in the body. Might it be suggested that some of these plates, which for the most part give no guide to the practical surgeon, could be replaced with advantage by photographs of the various splints as fixed to actual patients?

THE WORTH OF CHEMISTRY.

Chemistry in the Service of Man. By Prof. Alexander Findlay. Pp. xiii+255. (London: Longmans, Green and Co., 1916.) Price 5s. net.

THIS book is based upon a course of lectures delivered in 1915 by the author to the United Free Church College at Aberdeen. As a teacher of chemistry Prof. Findlay rightly considered he could do no more useful service than to give his hearers, who would otherwise have little opportunity of becoming acquainted with such matters, some information concerning what the

science of chemistry has been able to accomplish in the "uplifting" of mankind and in promoting its material well-being.

Although originally addressed to a Scottish audience, the author, in the selection and arrangement of his subject-matter, has been guided by other considerations than the purely utilitarian. His hearers, as a body, were presumably sufficiently enlightened to appreciate the philosophic vein which runs through the method of its presentation, and were able to set a proper value on his attempts to elucidate the abstract principles he sought to inculcate. His purpose was to recount not merely "the manifold ways in which chemistry has revolutionised life and has contributed, on the material side, to a civilised existence," but also to indicate "some of the principles which underlie chemical change and some part of the contribution which chemistry has made to our knowledge of the constitution of matter." In this happy blending of the philosophic and purely scientific with the utilitarian and material the book may be said to fulfil the ideal of what such a work should be. The author treats his themes with the dignity and reverence which, as a teacher imbued with the true spirit of science, he feels instinctively they merit. The doctrine is sound and accurate, and is set forth in sufficient fullness for the immediate purpose of exposition. At the same time the lay reader, for whom of course the book is mainly intended, will not be wearied or his interest weakened by technicalities or discussions of purely abstract principles. The tactful manner in which Prof. Findlay has managed to steer a middle course in this respect is a characteristic feature of his work. Moreover, he has not been unmindful of the signs and portents of the times. They have afforded him ample material for a lay-sermon, which he has not failed to drive home. The appearance of such a book at the present juncture is therefore most opportune.

The work opens with an exordium in which the province and scope of chemistry, both as a science and an art, are clearly and succinctly defined. It presents, as might be anticipated, no special features of novelty to the trained chemist, but it is well written, and is a good illustration of Prof. Findlay's power of lucid exposition and clear thinking. In a few comprehensive statements he traces in broad outline the developments of the conception of the atomic constitution of matter; the gradual recognition of its various elemental forms, and of the distinction between elements and compounds; the perception that the form of energy with which chemistry is specially concerned acts in accordance with definite laws, and that it is a science of quantitative relations capable of rigorous mathematical treatment. On the basis of this preparatory ground-work he proceeds to illustrate and explain, in about a dozen chapters, some of the most important achievements of the science, each chapter dealing with a specific subject or group of correlated subjects, such as Combustion and the Production of Fire; the Chemistry of Illuminants; Energy, Fuel and Explosives; Cellulose and Cellulose Products;